

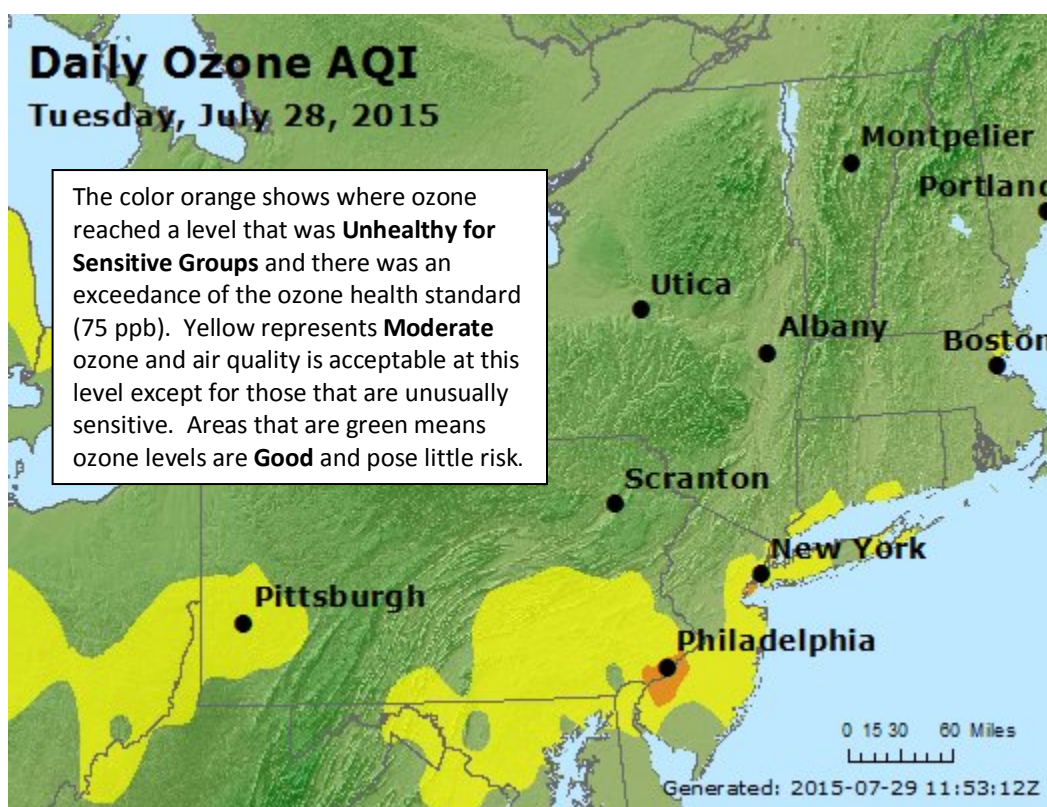
## Ozone National Ambient Air Quality Health Standard Exceedances on July 28, 2015

### Exceedances Locations and Levels

On Tuesday, July 28, 2015, exceedances of the 8-hour average National Ambient Air Quality Standard (NAAQS) for ozone (75 ppb) were recorded at three (3) New Jersey stations: : Bayonne with a concentration of 80 ppb, Camden Spruce Street with a concentration of 83 ppb, and Clarksboro with a concentration of 79 ppb. The highest 1-hour average ozone concentration recorded yesterday was 105 ppb at Bayonne, which is below the 1-hour NAAQS of 120 ppb. This is the ninth exceedance of the 8-hour ozone NAAQS in 2015 for New Jersey. By July 28 2014, there was a total of 2 days on which an ozone exceedance was measured in New Jersey, and there were 8 days by this same date in 2013.

There is a group of monitoring stations in designated counties of 5 states, New York, Connecticut, Pennsylvania, Delaware and Maryland that are included in New Jersey's ozone non-attainment areas. From this group of stations in the other neighboring states, there were four (4) exceedances of the 8-hour ozone NAAQS recorded on Tuesday, July 28, 2015: Susan Wagner, NY; Chester, PA; Lewis Street, Philadelphia, PA; and Northeast Airport, Philadelphia, PA. The highest 8-hour average ozone concentration recorded was 80 ppb at the Northeast Airport station in Philadelphia, PA. The highest 1-hour average ozone concentration recorded was 98 ppb at the Lewis Street site in Philadelphia, PA.

**Figure 1. Ozone Air Quality Index for July 28, 2015**



Source: [www.airnow.gov](http://www.airnow.gov)

For ozone terminology definitions see NJDEP Air Quality Planning's Glossary and Acronyms webpage: <http://nj.gov/dep/baqp/glossary.html>

### **Weather**

Meteorological data from across the region showed temperatures reached into the mid 90s° F, while winds were very light and variable with a stationary front positioned along the I-95 corridor. There were scattered clouds across the region, but there was enough sunshine to promote ozone formation. Sufficient sunlight, combined with warmer temperatures, and stagnant winds are all features commonly seen with an ozone episode.

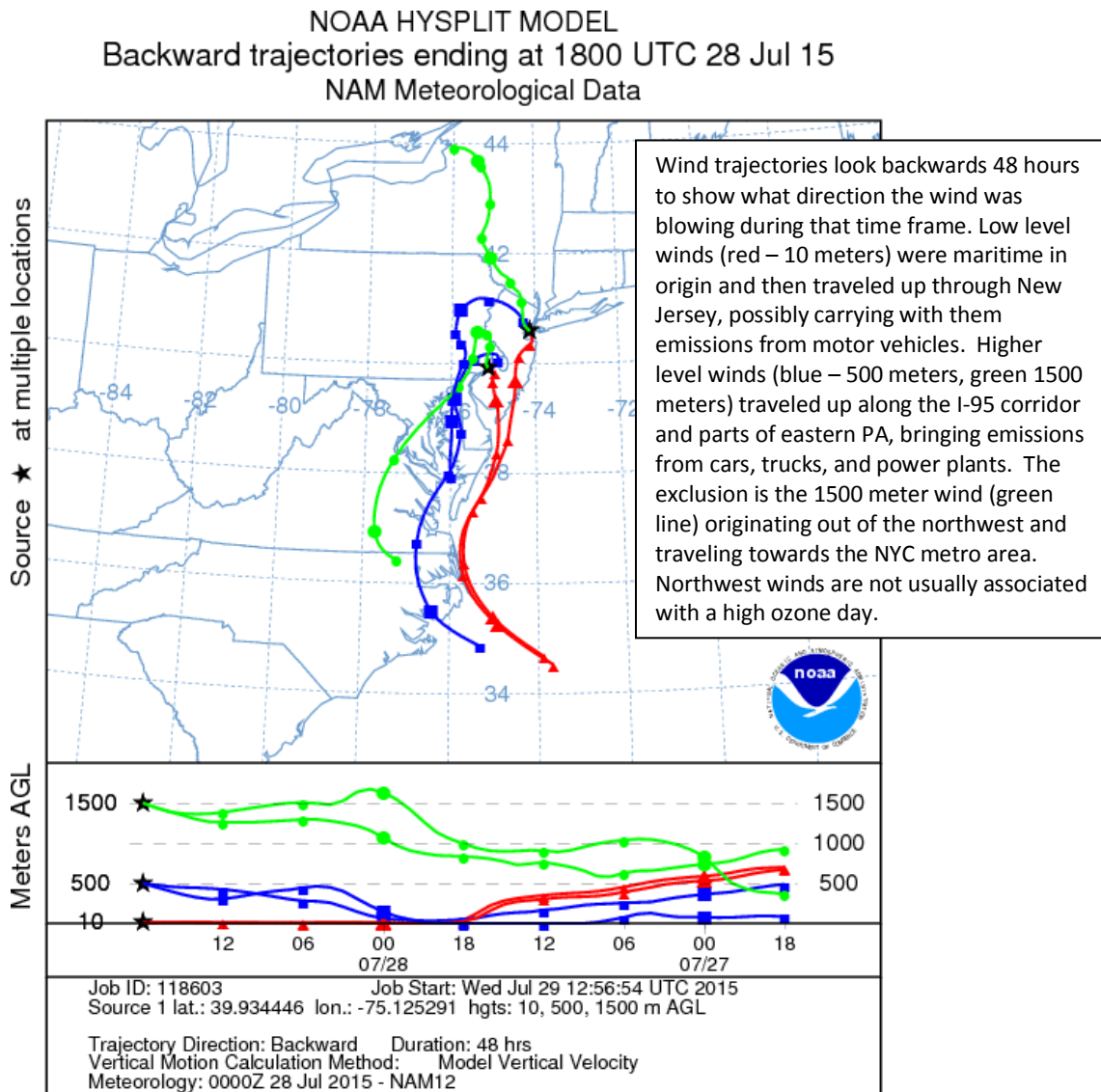
### **Where Did the Air Pollution that Caused Ozone Come From?**

Figure 2 shows the back trajectories for 2 selected monitored exceedances (Bayonne, NJ and Camden Spruce Street, NJ) for July 28. These sites were selected because they were representative of the two regions (NYC metropolitan area and Philadelphia metropolitan area) where ozone exceedances occurred. Figure 2 shows where the winds came from during the 48 hours preceding the high ozone levels at both locations.

Low level winds (red lines – 10 meter height) were maritime in origin and then traveled up through New Jersey, possibly bringing with them emissions from sources in New Jersey, including motor vehicles. Higher level winds (blue lines - 500 meters; green lines - 1500 meters) varied at the two monitored locations. At the Camden Spruce Street, NJ site in the Philadelphia metro area, 500 meter winds traveled up along the I-95 corridor through Virginia and Maryland, where there are significant amounts of air contaminant emissions from cars and trucks. The 1500 meter wind also traveled along the I-95 corridor but shifted north just before reaching Philadelphia, where it traveled up into Allentown, PA before circling back around to Camden, bringing back emissions from not only motor vehicles but power plants as well. At the Bayonne, NJ site in the NYC metro area, 500 meter winds traveled up along the I-95 corridor and eastern Pennsylvania, before shifting back around towards NYC, bringing back emissions from mobile sources and power plants. The 1500 meter wind originated out of the northwest, which is not usually associated with a high ozone day.

The combination of the winds discussed above caused air pollution from a variety of mobile and stationary sources to be transported into the Philadelphia and NYC metropolitan areas that experienced high ozone on July 28.

**Figure 2. 48-hour Back Trajectories for July 28, 2015**



### **How is Smog Created?**

Ground-level ozone, also known as smog, is an air pollutant known to cause a number of health effects and negatively impact air quality and the environment in the state of New Jersey. Smog is formed when oxides of nitrogen (NO<sub>x</sub>) and volatile organic compounds (VOCs) react in the presence of sunlight. Smog can irritate any set of lungs, but those with lung-related deficiencies should take extra precautions on bad ozone days.

### **Find Out About Air Quality Every Day**

The "What's Your Air Quality Today?" page at <http://www.nj.gov/dep/cleanairnj/> tells you how to sign up to receive notifications and find out when your local air has reached unhealthy ozone levels.